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1 — Pruitt outlines plan to overhaul Clean Air Act reviews, E&E News, 5/10/18

<https://www.eenews.net/stories/1060081391>

EPA Administrator Scott Pruitt is moving to revamp the agency's machinery for setting air quality standards for a half-dozen key pollutants, with a goal of completing two particularly charged reviews before the conclusion of President Trump's current term.

2 — EPA to move 'shortly' on chemical in paint stripper blamed for accidental deaths, ABC, 5/10/18

<https://abcnews.go.com/Politics/epa-move-shortly-chemical-paint-stripper-blamed-accidental/story?id=55072035>

The Environmental Protection Agency announced Thursday that it will move forward on a rule related to paint stripping chemicals that have been blamed for dozens of deaths from people who inhaled the toxic fumes from the chemical.

3 — Feds split 'pit' work between LANL and S.C., Albuquerque Journal, 5/10/18

<https://www.abqjournal.com/1170411/feds-decide-to-split-production-of-plutonium-pits-between-s-c-los-alamos.html>

The majority of the nation's production of plutonium cores for nuclear weapons would take place at the Department of Energy's Savannah River Site in South Carolina under a plan certified by the Nuclear Weapons Council and announced Thursday, but a lesser number of plutonium "pits" would still be made at Los Alamos National Laboratory.

4 — Nuclear waste could be headed to West Texas under house bill, Houston Chronicle, 5/10/18

<https://www.chron.com/business/energy/article/Nuclear-waste-could-be-headed-to-West-Texas-under-12901612.php>

Radioactive waste from nuclear power plants across the country could be headed to West Texas under legislation passed by the House today. The legislation, which passed 340 to 72, directs Secretary of Energy Rick Perry to find interim storage sites for the growing stockpile of waste at the nation's nuclear power plants, while also restarting the licensing process for a controversial permanent storage facility in Nevada, at the Yucca Mountain site.

5 — TCEQ helping Kempner water group after chemical violation, Killeen (TX) Daily Herald, 5/10/18

http://kdhnews.com/news/local/tceq-helping-kempner-water-group-after-chemical-violation/article_4ee4b0d0-549e-11e8-a17d-739e79b4f3dc.html

The state is helping the Kempner Water Supply Corporation work toward compliance after the regional water group was hit with a violation April 30 for elevated chemical levels in its drinking water supply.

6 — Fort Bend County residents form group to push for flooding prevention, Houston Chronicle, 5/10/18

<https://www.chron.com/neighborhood/fortbend/news/article/Fort-Bend-County-residents-and-officials-discuss-12903452.php>

More than eight months after Hurricane Harvey drenched the area, over a hundred Fort Bend County residents have formed an organization to advocate for flood prevention with county officials.

7 — DOE's coal fight keeps focus on 'national security', E&E News, 5/11/18

<https://www.eenews.net/energywire/stories/1060081455> doe

The Department of Energy is actively looking to identify key electric generating units that would be needed in a national emergency, Bruce Walker, DOE's assistant secretary for electricity delivery and energy reliability, said yesterday.

8 — Firefighters Fail to Sway EPA as Locals Manage Chemical Risks, BNA, 5/10/18

<https://www.bna.com/firefighters-fail-sway-n73014475783/>

The call to police came in on a winter night in 2017 in McIntosh, an Alabama town with fewer than 300 people: Chlorine gas was leaking at one of the town's chemical plants.

9 — Oil spewing in NW OKC closes roads Thursday afternoon, The Oklahoman, 5/10/18

<http://newsok.com/oil-spewing-in-nw-okc-closes-roads-thursday-afternoon/article/5594215>

Oklahoma City fire crews responded Thursday afternoon to reports of a "yellow liquid" spewing from the ground near an oil well site in northwest Oklahoma City.

10 — See ozone levels at 6 greater New Orleans-area sites, New Orleans Times-Picayune, 5/10/18

http://www.nola.com/environment/index.ssf/2018/05/ozone_levels_6_new_orleans_sit.html#incart_river_index

The New Orleans metro area is under an air quality alert Thursday (May 10) until midnight, marking the third consecutive day officials have warned of the possibility of unhealthy ozone levels. Just how high are ozone levels in our areas?

11 — Sea ice is getting younger. Here's why that's a big deal, E&E News, 5/11/18

<https://www.eenews.net/climatewire/2018/05/11/stories/1060081419>

When it comes to sea ice, old age can be a good thing. So it's troubling to researchers that older layers of Arctic sea ice — which have persisted for multiple years in a row — are increasingly melting away.

AIR POLLUTION

Pruitt outlines plan to overhaul Clean Air Act reviews

Sean Reilly, E&E News reporter

Greenwire: Thursday, May 10, 2018



EPA Administrator Scott Pruitt, shown here at an event yesterday, signed a memo to guide the handling of future National Ambient Air Quality Standards reviews. @EPAScottPruitt/Twitter

EPA Administrator Scott Pruitt is moving to revamp the agency's machinery for setting air quality standards for a half-dozen key pollutants, with a goal of completing two particularly charged reviews before the conclusion of President Trump's current term.

In a memo released this morning laying out five "principles" for handling of the National Ambient Air Quality Standards (NAAQS), Pruitt said he was ordering agency staff to launch a fresh assessment of the ground-level ozone standard so that it can be wrapped up by a statutorily required deadline of October 2020.

EPA also intends to accelerate an ongoing assessment of the particulate matter standards, currently scheduled to end in 2022, so that it will conclude in December 2020, Pruitt indicated.

Among a host of other changes laid out in the 11-page memo, Pruitt seeks to streamline procedures for evaluating scientific research used to determine whether current or proposed standards are adequate to protect public health, and differentiate between "science and policy considerations" during reviews of the standards.

He also wants to require EPA to issue implementation regulations at the same time it orders changes to the thresholds for ozone, particulate matter and the four other "criteria" pollutants listed in the Clean Air Act.

The Clean Air Scientific Advisory Committee, a seven-member panel that offers outside expertise to EPA during the reviews, would have to examine "adverse" economic and energy effects that might result from revisions to the standards for the six pollutants. That step is backed by industry groups but opposed by environmental and public health organizations.

The planned changes come less than a month after Trump ordered EPA to study the NAAQS review process, a cornerstone of the Clean Air Act.

They will "reform" standard-setting procedures "in a manner consistent with cooperative federalism and the rule of law," Pruitt said in a statement today.

"Getting EPA and its advisers back on track with Clean Air Act requirements, statutory deadlines, and the issuance of timely implementation rules will ensure that we continue the dramatic improvement in air quality across the country."

Critics, while still digesting the potential impact this morning, denounced the effort as an attempt to undercut the act's requirement that pollution standards be set to protect public health with an "adequate margin of

safety."

They also linked it to two other Pruitt initiatives: changes to membership requirements for EPA advisory panels announced last fall and a recently published proposal that would limit the types of studies the agency could tap in crafting new regulations.

"We're seeing a coordinated effort," said Paul Billings, senior vice president for advocacy at the American Lung Association, adding that the group plans to fight the changes outlined in the memo "with all tools available."

Taken together, the changes, undertaken with no advance notice or opportunity for public comment, would amount to a major overhaul of the NAAQS review process.

Under the act, EPA is supposed to assess the standards for the six pollutants, which also include airborne lead, nitrogen dioxide, sulfur dioxide and carbon monoxide, every five years. In practice, the agency rarely, if ever, meets that timetable.

"Those delays result in uncertainty as well as lost opportunities for implementing the NAAQS to protect the environment in a manner compatible with a robust American economy," Pruitt said in the memo.

But by ordering a new review of the ozone standard, last tightened to 70 parts per billion in October 2015, Pruitt is setting a start-to-finish timeline of less than 2 ½ years.

Litigation surrounding that 70 ppb threshold is, meanwhile, unresolved. A coalition of industry groups argues that EPA acted arbitrarily in lowering it from the previous level of 75 ppb; environmental and public health organizations, including the lung association, say the scientific evidence warrants cutting it as low as 60 ppb.

At EPA's request, however, the consolidated litigation, playing out before the U.S. Court of Appeals for the District of Columbia Circuit, has been on hold since April 2017 while the agency reconsiders its position.

EPA air chief Bill Wehrum did not immediately reply to an email asking when the agency plans to begin the new review; the agency's latest six-month regulatory agenda, released yesterday, does not mention it.

The last review of the particulate matter standards ended in 2012. Since then, a mounting body of scientific evidence has suggested the current limits are not strong enough to adequately protect public health.

A Harvard University study published last summer, for example, found that prolonged exposure to rising levels of fine particulates — even at levels below EPA's current annual level of 12 micrograms per cubic meter of air — led to more hospital stays.

Industry groups, worried about the compliance costs that would accompany particulate matter limits, have been watching warily.

Pruitt did not give a precise rationale for now setting a December 2020 deadline for completion of the current assessment, but said EPA "should seek to identify efficiencies in the simultaneous reviews" of the ozone and particulate matter standards.

By that point, the Clean Air Scientific Advisory Committee, whose seven members traditionally come mainly from academia, will likely be fully controlled by Pruitt appointees. Under the new membership criteria for EPA advisory committees rolled out last October, anyone with a current EPA grant is barred from serving.

Three of the board's seven members have since been appointed by Pruitt. The terms of the other four all expire later this year; EPA has already sought nominations for their replacements.

Among the three members named by Pruitt is the board's chairman, Tony Cox, a Colorado consultant whose clients have included the American Petroleum Institute. Cox opposed EPA's 2015 decision to tighten the ozone standard.

In an email to E&E News last month, Cox said he had not decided on whether the particulate matter standards need to be changed.

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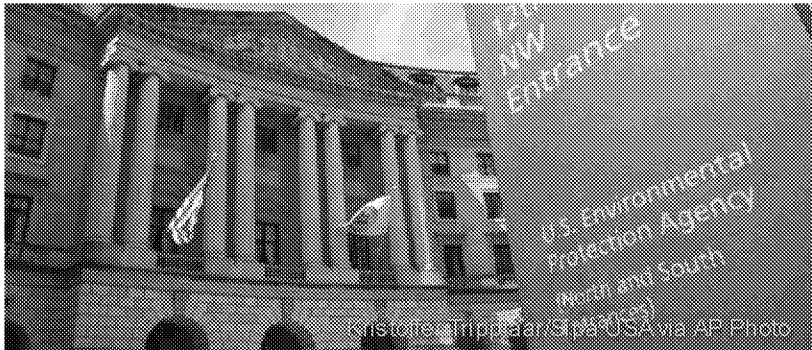
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EPA to move 'shortly' on chemical in paint stripper blamed for accidental deaths

By STEPHANIE EBBS

May 10, 2018, 1:55 PM ET



Sign outside of the headquarters of the United States Environmental Protection Agency (E... more +

The Environmental Protection Agency announced Thursday that it will move forward on a rule related to paint stripping chemicals that have been blamed for dozens of deaths from people who inhaled the toxic fumes from the chemical.

On Thursday the agency announced in a press release that it will go back to its finding that the chemical is dangerous and move forward on a rule, but did not provide specifics on whether that rule would include a previously proposed ban on the chemical.

The decision comes days after EPA Administrator Scott Pruitt met Tuesday with family members of two young men who died after inhaling methylene chloride fumes last year. One of those victims, 21-year-old Tennessee resident Kevin Hartley of Tennessee after he collapsed at work while refinishing a bathtub, according to the Tennessean.

The EPA first documented the risks from methylene chloride use in 2014 and proposed in January 2017 that the agency ban the chemical in products intended to remove paint. But later in 2017 the agency reversed course and delayed the rule, leading to criticism from advocacy groups, members of Congress, and families whose loved ones died after inhaling the chemical's fumes.

A 2015 investigation from a nonprofit journalism group the Center for Public Integrity found at least 56 deaths from accidental exposure to methylene chloride since 1980.

Wendy Hartley, Kevin Hartley's mother, said in a statement after that meeting that the family was disappointed Pruitt did not take immediate action to ban the chemical.

"We are not political people. Our only interest is to prevent this terrible and preventable tragedy from happening to others. There is no excuse for inaction. Lives are on the line. I pray no more parents are forced to go through what we have," she said in a statement distributed by the advocacy group the Environmental Defense Fund.



Justin Sullivan/Getty Images

The U.S. Environmental Protection Agency's (EPA) logo is displayed on a door at it... more +

The CDC described the chemical called methylene chloride as a "highly volatile, colorless, toxic" and said that it is "unlikely" that it can be used safely. A study of deaths from the chemical fumes inhaled while workers were stripping bathtubs found that exposure to the chemical can become toxic after just one hour of using it and the EPA says that the fumes can hurt the nervous system and that long-term exposure has been linked to cancer.

An industry group for companies that produce these chemicals previously asked the EPA to delay the rule and said in a comment on the proposed rule that the ban would be devastating for consumers and small businesses. The group previously asked the Consumer Products Safety Commission to put more warning labels on products containing methylene chloride.

The Environmental Defense Fund, which has been advocating for the EPA and retailers to ban products with methylene chloride, said in a statement that the decision to move forward is encouraging.

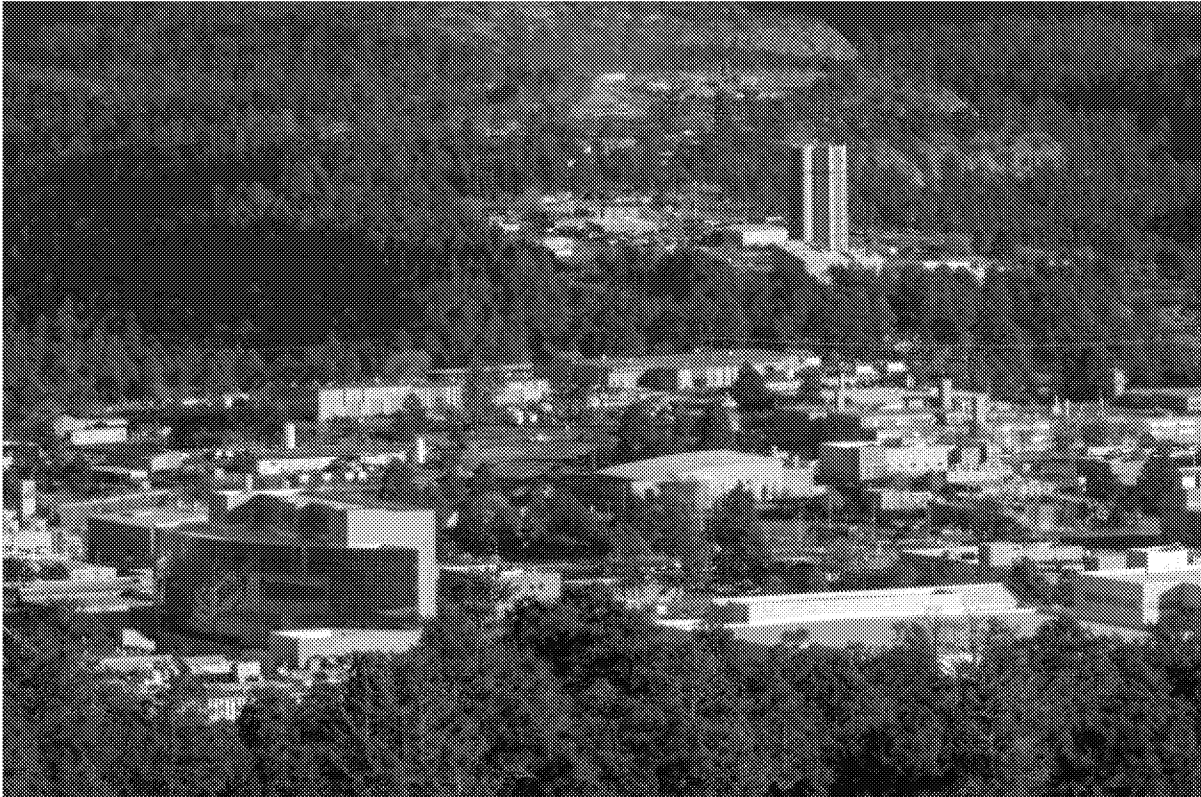
"We will delay any celebration until paint strippers containing this deadly chemical are actually off the market. There are a number of steps that now must be taken in order to effectively finalize and implement this ban," the group's Vice President of Health Sarah Vogel said in a statement. "But if methylene chloride in paint strippers is effectively removed from the marketplace, it will be a good day for American families."

Feds split 'pit' work between LANL and S.C.

By Mark Oswald And Michael Coleman / Journal Staff Writers

Published: Thursday, May 10th, 2018 at 3:37pm

Updated: Thursday, May 10th, 2018 at 10:11pm



Pit production will remain at Los Alamos National Laboratory, but a bigger number of the nuclear weapons cores will be made the Department of Energy's Savannah River Site in South Carolina. (EDDIE MOORE/JOURNAL)

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WASHINGTON, D.C. – The majority of the nation's production of plutonium cores for nuclear weapons would take place at the Department of Energy's Savannah River Site in South Carolina under a plan certified by the Nuclear Weapons Council and announced Thursday, but a lesser number of plutonium "pits" would still be made at Los Alamos National Laboratory.

The council has accepted a National Nuclear Security Administration recommendation to repurpose a facility at Savannah River to make 50 pits a year coupled with "an enduring mission" to make at least 30 pits per year at Los Alamos, currently the only place in the country set up to make the softball-sized cores.

The two-pronged approach "is the best way to manage the cost, schedule, and risk of such a vital undertaking," according to a statement Thursday by Ellen M. Lord, Department of Defense undersecretary for acquisition and sustainment and chairwoman of the Nuclear Weapons Council, and Lisa E. Gordon-Hagerty, Department of Energy undersecretary for nuclear security, administrator of the NNSA and a member of NWC.

"Furthermore, by maintaining Los Alamos as the Nation's Plutonium Center of Excellence for Research and Development, the recommended alternative improves the resiliency, flexibility, and redundancy of our Nuclear Security Enterprise by not relying on a single production site," the statement said.

At her confirmation hearing in February, Gordon-Hagerty told Congress that ramping up plutonium pit production was the most important issue on her agenda as head of the nation's nuclear weapons complex.

Democratic members of New Mexico's congressional delegation, who had been lobbying fiercely to keep and expand the plutonium work at LANL, said the announcement was both good and bad for the weapons lab.

In a joint statement, Sens. Tom Udall and Martin Heinrich and Reps. Michelle Lujan Grisham and Ben Ray Lujan lamented that pending plans to build new underground "modules" for making the plutonium pits at LANL will be halted.

"While we are pleased that Los Alamos National Laboratory will remain the Research & Development Plutonium Center of Excellence and will be allowed to expand their plutonium pit production capability with a new multi-billion investment, halting the long-planned modular expansion of LANL's facilities for plutonium pit production will set back our military's life extension programs and stretch the Lab's existing facilities and workforce to its limits," the New Mexico lawmakers said.

"Instead of wasting billions of dollars exploring the construction of a new facility that will likely never be completed somewhere else, the Department of Energy should immediately move forward with the new, modular plutonium facilities at Los Alamos – as originally endorsed by both Congress and the Nuclear Weapons Council."

Modernization plan

The NNSA is under a congressional mandate to make 80 pits a year by 2030 as part of an extensive nuclear weapons modernization plan. It has been studying whether LANL or somewhere else is the best place to reach that goal.

The possibility that pit manufacturing – which comes with billions of dollars in funding for operations and facilities and hundreds of jobs – might take place somewhere other than Los Alamos was first reported by the Journal last year, after NNSA officials made brief mention of the idea at public meeting in Santa Fe.

Udall and Heinrich inserted an amendment into the latest defense budget bill that made it more difficult for NNSA to move pit production from LANL, requiring the Nuclear Weapons Council's approval. The amendment also set a deadline of this week for action.

The U.S. manufactured thousands of pits during the Cold War at the old Rocky Flats facility in Colorado.

No new pits have been made since 2011, when LANL completed the last of 29 for Navy submarine missiles. The most ever made at Los Alamos in a year is 11.

Meanwhile, work at LANL was stalled by a series of mistakes, and the lab has faced scrutiny for safety lapses, including several in recent months involving plutonium and preliminary pit-making work.

Jay Coghlan, executive director of Nuke Watch New Mexico, said the NNSA announcement represented "in large part a political decision, designed to keep the congressional delegations of both New Mexico and South Carolina happy."

"There is no explanation why the Department of Defense requires at least 80 pits per year, and no justification to the American taxpayer why the enormous expense of expanded production is necessary," Coghlan said.

Late last year, a "summary of results" page from the NNSA study was leaked showing estimates that the goal of 80 pits a year could be reached quicker and more cheaply at sites other than Los Alamos, including Savannah River, despite several prior years of planning for new underground facilities for plutonium work at LANL.

New Mexico's congressional delegation called the study "deeply flawed from the start."

Old pits

Some critics maintain there is no need to make any new pits, with thousands produced in the past and now in storage that could be adapted for use. Former NNSA Director Linton Brooks recently proposed the use of old pits as an alternative if new production proved too difficult.

“No new pits are needed for any warhead,” said Greg Mello, executive director of the Los Alamos Study Group, another nuclear weapons watchdog organization. “In the longer run, government would be wise to focus on pit reuse, because there are thousands of usable pits sitting around.”

But Mello also said the NNSA’s decision “appears to be a rational one within the limits of existing law.”

“LANL can’t handle the industrial mission, period, and there was always going to be overlap in time between small pit production at LANL and the establishment of any new production site,” he said.

Thursday’s news release said a facility for pits at Savannah River Site will be created by converting the Mixed-Oxide Fuel Fabrication Facility, or MOX.

The facility was conceived for conversion of weapons-grade plutonium from dismantled warheads into fuel for nuclear reactors as part of an agreement between the U.S. and Russia to dispose of tons of weapons-grade plutonium.

But the giant project, which broke ground more than a decade ago, has faced delays, litigation and costs ballooning from an early estimate of \$4 billion to a projected \$17 billion now. The Obama administration called for abandoning it.

South Carolina officials, including Gov. Henry McMaster, have been pushing to keep the MOX mission even as local officials in the Savannah River area, near Augusta, Ga., have been wooing the pit work, with positive resolutions passed by local governments.

But on Thursday, as the NNSA unveiled the pit production plan, U.S. Secretary of Energy Rick Perry executed a waiver to terminate MOX construction, according to a report in the Aiken Standard, a South Carolina newspaper.

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Nuclear waste could be headed to West Texas under house bill

By James Osborne Updated 3:07 pm, Thursday, May 10, 2018
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IMAGE 1 OF 4

A caution sign surrounding the low-level radioactive waste site at Waste Control Specialists (WCS) near Andrews, Texas.

WASHINGTON - Radioactive waste from nuclear power plants across the country could be headed to West Texas under legislation passed by the House today.

The legislation, which passed 340 to 72, directs Secretary of Energy Rick Perry to find interim storage sites for the growing stockpile of waste at the nation's nuclear power plants, while also restarting the licensing process for a controversial permanent storage facility in Nevada, at the Yucca Mountain site.

Finding communities willing to take the radioactive waste has proven hugely difficult in the past, but one option available to Perry would be an existing hazardous waste site in Andrews County in West Texas, where Dallas-based Waste Control Specialists is proposing to store spent nuclear fuel until a permanent storage facility is completed.

RELATED STORY: Tensions reignite over West Texas nuclear waste storage

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The legislation, which was introduced last year by Rep. John Shimkus, R-Ill., has passed in similar form in past Congresses but has so far failed to

Greenpeace Hungary's floating...

win support in the Senate. At issue are concerns from communities surrounding potential storage sites, as well as criticism from multiple sites is simply too dangerous.

"The whole nation could be at risk from an unprecedented mass movement of high-level radioactive waste across the nation, with 10,000 rail cars of deadly waste being transported over a period of 20 or more years," said Karen Hadden, director of the Austin-based advocacy group Sustainable Energy and Economic Development Coalition.

Within the Texas congressional delegation, Republicans nearly unanimously voted for the bill while the Democrats split, with Rep. Beto O'Rourke, of El Paso, who is challenging Sen. Ted Cruz in the midterms, and Rep. Al Green, of Houston, among those opposed.

WCS announced earlier this year it was partnering with the French energy giant Orano, which has a long history of managing and storing nuclear waste in France. That nation operates more nuclear reactors than any country in the world besides the United States.

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WCS and Orano have since notified the Nuclear Regulatory Commission they plan to resume the licensing process, which WCS suspended last year due to financial concerns, said Thomas Graham, a spokesman for the joint venture.

"Nuclear fuel management has been successfully addressed for more than 60 years without any industrial accidents," he said. "The processes that are in place are redundant and thorough."

But West Texas is not the only region being targeted for nuclear waste.

Holtec International, the New Jersey-based equipment supplier, has proposed a storage site in southeast New Mexico to store 120,000 tons of nuclear waste, according to the non-profit Nuclear Information and Resource Service. The NRC is reviewing that application and is currently staging a series of public meetings in New Mexico to discuss the proposal.

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ALERT

TOP STORY

TCEQ helping Kempner water group after chemical violation

By Kyle Blankenship | Herald staff writer 15 hrs ago



The Kempner Water Supply Corporation is seen Wednesday, May 25, 2016, at its location on U.S. Highway 190 in Kempner.

Artie Phillips | Herald

The state is helping the Kempner Water Supply Corporation work toward compliance after the regional water group was hit with a violation April 30 for elevated chemical levels in its drinking water supply.

The Texas Commission on Environmental Quality cited the corporation for haloacetic acid levels higher than the Environmental Protection Agency-mandated limits in four tests March 1. In one sample, chemical levels were nearly three times higher than the limit of 0.06 milligrams per liter.

In response, corporation manager Delores Atkinson issued an alert on the group's website saying results from a second set of water samples were pending after elevated samples were taken in March. She has not responded to multiple calls and emails from the Herald about the violation.

On Thursday, the state said it was working with the corporation to work toward full compliance.

"To assist the WSC with the (haloacetic acids) violation, the TCEQ will be providing on-site targeted technical assistance for identifying possible disinfection byproducts compliance strategies," said Brian McGovern, media relations specialist with the commission.

A water corporation is considered to be in compliance when there are no violations at any compliance monitoring location for at least one quarter.

McGovern said haloacetic acids are a byproduct of the disinfection process of drinking water, which the group buys and transports from the Central Texas Water Supply Corporation.

"While disinfectants are effective at controlling many harmful microorganisms, they can react with organic and inorganic matter in the water and form disinfection byproducts, such as total haloacetic acids," McGovern said. "While working to reduce disinfection by-products public water systems should never compromise effective disinfection."



According to the EPA, haloacetic acids are listed under the Group 2B cancer classification, denoting a possible elevated risk of cancer in humans with continued contact. In other cases, the chemicals can cause irritation to human eyes and skin on contact.

Although the state commission only cited the corporation for haloacetic acids, other samples taken during that time showed the corporation's water also showed elevated levels of trihalomethanes.

In four samples March 1, the corporation reported trihalomethane levels in excess of the federal limit of .08 milligrams per liter. One of the samples was nearly double the federal limit.

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Kyle Blankenship

Fort Bend County residents form group to push for flooding prevention

By Brooke A. Lewis Updated 6:41 pm, Thursday, May 10, 2018

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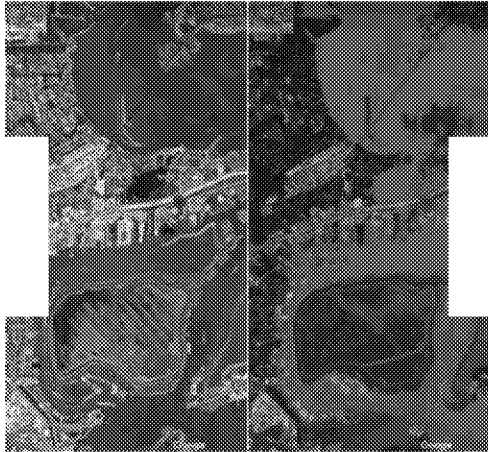


Photo: BeFunky Collage

IMAGE 1 OF 37

>> See the startling before and after satellite images of Harvey flooding in Houston...

More than eight months after Hurricane Harvey drenched the area, over a hundred Fort Bend County residents have formed an organization to advocate for flood prevention with county officials.

Jean-Charles Ginestra, a retired engineer, spearheaded the idea after his home in Woods Edge flooded for the first time during Harvey.

"We started realizing that we're only one subdivision," Ginestra said this week. "We could get more clout if we networked with other subdivisions. We started looking around, connecting with

people, basically talking to someone who knows someone and engaging with other subdivisions and slowly built the network."

This week, he and other residents met with county officials Christ's Church Foster Creek in Richmond to share their concerns and question officials about how they plan to prevent flooding in the future.

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Hurricane Harvey's toxic impact on Houston was more widespread than publicly reported, an AP-Houston Chronical investigation has found. In the more than 100

spills catalogued by reporters, environmental testing was limited. (March 22)

Media: Associated Press

"We understand that nothing is going to get done before hurricane season starts in three weeks," Ginestra said during the meeting Wednesday night. "But, everybody is pretty leery about what we're going to see this year."

Ginestra, 64, has lived in his home for more than 20 years and decided to become more engaged with county officials in Harvey's aftermath. More than 20 houses flooded within his subdivision in Richmond. He and his wife, also a retired engineer, began studying their subdivision and came up with their own conclusions as to why their area flooded.

He also began talking with the Fort Bend County Drainage District about flooding problems in October and ran for a seat on his homeowners association board in January. He realized other neighbors were concerned about the same issues and decided to bring subdivisions together.

During Wednesday's meeting, Ginestra presented information on the Jones Creek watershed and goals that residents want the county to tackle, which include improving drainage channels to the Brazos River and creating regional parks to serve as flood detention centers.

Harvey damaged more than 6,800 homes in Fort Bend County, according to data presented in March by the Fort Bend County Office of Emergency Management. The county conducted more than 10,000 rescues as 200,000 people were ordered to evacuate from their homes.

Ginestra said some of the subdivisions flooded as a result of Jones Creek entering area drainage ditches or due to the Brazos River backing up into Jones Creek.

"Jones Creek needs to be improved in several ways to facilitate flow of its water down to the Brazos," Ginestra said earlier this week. "Right now there are only one or two ways that it can flow to the Brazos and both of those drainage channels from Jones Creek to the Brazos are compromised or insufficient."

During the meeting, Chris Elam, an intergovernmental relations manager for Precinct 3, and Mark Vogler of the Fort Bend County Drainage District discussed measures that the county was considering. They include the study of the Jones Creek watershed, initiated in 2014, and a study of the entire county's watershed.

"We've analyzed these things in the past based on the technology we had and the criteria we had at that time, but things are changing," Vogler said of the county watershed study. "So, we want to re-look with some modeling technology we have today at the Brazos River."

Fort Bend County commissioners approved advertising last week for a "Request for Qualifications" for the countywide watershed study, which would help analyze water flow across the county. Streams, creeks, drainage districts, levee districts and bayous would also be studied within Fort Bend. County officials believe the study should be completed in December 2019 or early next year.

Some residents voiced frustration toward the close of the meeting about the slow process of seeing results to help with area flooding, but elected officials noted that flooding projects take time to complete and can be extremely expensive.

After Harvey struck, Elam said, he and Vogler "were right there together for several days talking about these issues in between our shifts. Taking a look at what the county has done, the urgency began before Harvey."

ELECTRICITY

DOE's coal fight keeps focus on 'national security'

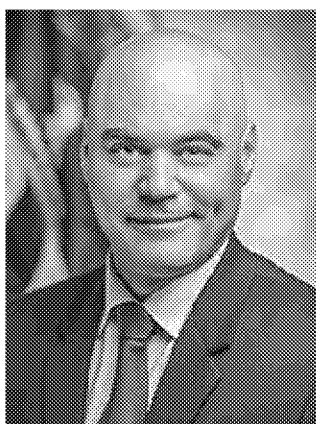
Rod Kuckro, E&E News reporter

Published: Friday, May 11, 2018

The Department of Energy is actively looking to identify key electric generating units that would be needed in a national emergency, Bruce Walker, DOE's assistant secretary for electricity delivery and energy reliability, said yesterday.

"DOE's role is very straightforward. It's national security," he said, speaking to the board of trustees of the North American Electric Reliability Corp. (NERC). "My day-to-day life is spent on national security."

NERC as the chief reliability watchdog and the Federal Energy Regulatory Commission as the economic regulator for interstate pipelines and transmission have very different roles than DOE, Walker said.



Bruce Walker, Department of Energy

"We just approach it from a different vantage point," he said.

The "it" is the question of whether and how the federal government should encourage financial support to coal and nuclear plants operating in the East that cannot earn money in today's electricity market.

In late March, FirstEnergy Corp.'s generating subsidiary made a formal request for DOE to use its authority under Section 202(c) of the Federal Power Act to declare a grid emergency and direct subsidies to unprofitable coal and nuclear plants.

The question also is tied to FERC's inquiry into how to ensure the electric grid is resilient enough to handle a major disaster. According to DOE officials, resiliency means valuing large coal and nuclear plants because of their on-site fuel supplies. FERC commissioners aren't so sure.

Walker cited the so-called FAST Act of 2015 as driving DOE's work. That law directed DOE to "identify what the defense-critical electric infrastructure was in the United States. Unfortunately, that wasn't done in 2015 as was required by the law," Walker said.

Now that DOE has "defined" that infrastructure "we are working continuously on a day-to-day basis to find those assets that will be required when and if the bell rings to make sure that we have the capabilities to keep the country up and running," Walker told the NERC board.

Richard Glick, a FERC commissioner since November, also addressed the NERC board.

"Conceptually, I think it makes a lot of sense to be concerned," he said. Most people would agree, he said, that the U.S. will see more extreme weather events.

"It's worthwhile to take a look at this issue on an in-depth basis," he said, noting that Wednesday was the deadline for parties to submit to FERC response comments to the agency's January request that regional grid operators answer a series of questions on resilience.

The FERC inquiry is an alternative to a DOE demand last year that the commission issue a proposed rule to allow for the subsidies. FERC unanimously rejected that request by Perry.

"But I'm increasingly concerned that we're headed in another direction," Glick said.

Glick added that he's concerned the resilience proceeding at FERC and proposals for DOE to use the Federal Power Act or the Defense Production Act are all aimed at subsidizing older coal and nuclear plants that aren't able to compete in a market dominated by lower-cost natural gas generation and renewable energy.

"I'm familiar with both of those statutes," Glick said. DOE invoked both when he worked for Energy Secretary Bill Richardson "in a true emergency situation during the California energy crisis."

Older plants, mostly coal plants, "are just not doing as well economically," he said.

"I haven't seen significant evidence that suggest that somehow we need to protect certain types of electric generation if they're disadvantaged from an economic perspective," Glick said.

On Wednesday, the attorneys general of Massachusetts, Connecticut, Illinois, Maryland, North Carolina, Oregon, Rhode Island, Virginia, Washington, and the District of Columbia requested that Energy Secretary Rick Perry turn back FirstEnergy's request for aid.

Perhaps foreshadowing grounds for litigation if Perry were to act favorably for FirstEnergy, the attorneys general said a conclusion that FirstEnergy faces an emergency and therefore should get federal help "would be unlawful" and "would undermine competitive regional power markets, burden customers with excessive costs, undercut state energy laws and policies, and exacerbate pollution and public health harms."

Tom Farrell, CEO of Dominion Energy Co., opened the NERC board session with a welcome message that included a strong defense for natural gas as the cleanest fossil fuel and a future generation fleet of carbon-free nuclear and renewables.

"Our company believes that some form of power station carbon regulation is virtually assured," Farrell said.

He cited the work by Virginia's environmental regulators to "quickly fill the gap left by the apparent demise of the Clean Power Plan," the Obama administration's landmark program to force states to cut their carbon dioxide emissions from power plants.

Specifically, Farrell said he expects the state will join the Regional Greenhouse Gas Initiative, a nine-state, cap-and-trade program.

"Transition to a lower carbon generating fleet is inevitable," he said, explaining why "we believe [natural gas] is a critical part of a solution."

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Firefighters Fail to Sway EPA as Locals Manage Chemical Risks

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By Sam Pearson

The call to police came in on a winter night in 2017 in McIntosh, an Alabama town with fewer than 300 people: Chlorine gas was leaking at one of the town's chemical plants.

Workers inside the Olin Corp. chlorine plant had been attaching hoses to rail cars, preparing to load them with chlorine, according to an [incident report](#). Around 7 p.m. on Feb. 15, monitors alerted employees to leaking chlorine, which can cause coughing, blurred vision, difficulty breathing, and nausea if inhaled, according to the Centers for Disease Control and Prevention.

Twenty-five minutes later, alarms at the fence line went off, showing trace amounts of the substance. An hour later, plant operators called 911.

Confusion arose as officers arrived at the Olin plant, Mike Ready, the town's police chief, told Bloomberg Environment. An emergency dispatcher told the officers to close the road, but they weren't able to get more specific information right away from the company on the nature of the chemical release. The company later determined it released 738 pounds of chlorine that night, the incident report said.

The challenge that McIntosh officers faced isn't unique. Local agencies countrywide have grappled with how to get the information they need before things go wrong and in the midst of an emergency response.

Pending federal regulations issued during the Obama administration would have expanded information sharing and planning requirements for major facilities, but the Trump administration has paused the initiative. What happens next has implications for the workers who will have to manage these types of incidents in the future.

Significant But Rare

While most chemical plants don't experience major accidents, the consequences can be significant when they do occur.

The EPA found that between 2007 and 2017, plants regulated by the agency's facility security program saw 1,517 reportable accidents that killed 59 people and sent more than 17,000 others to seek medical treatment.

One of the McIntosh officers, Lt. Charles Koger, later told a local television station that responding to the chlorine leak left him with a scratchy cough that lasted a week. His boss said the officers were unprepared.

"The plant dropped the ball," Ready said of what happened in his town, "and it's lucky somebody didn't get injured or killed over it. Chlorine's no joke."

'Deaf Ears'

The incident in McIntosh is typical of what can happen to first responders nationwide.

First responders also were at risk in a high-profile response at an Arkema Inc. chemical facility in Crosby, Texas, in the aftermath of Hurricane Harvey in August 2017. Workers lost control of a volatile class of substances known as reactive chemicals when refrigeration units failed amid heavy flooding.

Like McIntosh, Harris County Sheriff's deputies were instructed to close a major road, U.S. Highway 90, near the plant. They waited for days as Arkema's chemicals overheated and broke down.

The local fire department established a 1.5-mile perimeter, and sheriff's deputies later took over keeping watch. But the company never told them what precautions to take, just that they should maintain the perimeter, Misty Hataway-Cone, an attorney at Spurlock & Associates PC in Humble, Texas, told Bloomberg Environment.

She is representing 14 emergency response workers in a lawsuit against Arkema in the U.S. District Court for the Southern District of Texas, which is scheduled for trial in March 2020.

Law enforcement officers believed the substances were harmless and when the chemicals exploded, no one from Arkema told them what was going on, according to Hataway-Cone.

"These officers were never, ever warned of what chemicals were going to be released," she said. Nor were they informed of exposure information, precautions to take, or what to do if they saw a chemical cloud, which led to first responders falling ill in the street and needing medical attention, she said.

The U.S. Chemical Safety Board, which is investigating the root cause of Arkema's chemical release, is also examining what implications the events have for emergency preparedness and response efforts. The CSB is a nonregulatory agency and doesn't issue citations or fines.

The board lists inadequate emergency responses on its drivers of critical chemical safety change program, a list of what the board thinks are the five most important safety improvements. The agency has flagged flawed emergency response efforts in 14 of its completed investigations. A board spokeswoman said the agency can't discuss the Arkema probe until it is complete.

Firefighters Involved

While police unions haven't been especially involved with emergency response regulations at the federal level, firefighting organizations have rallied around the issue.

In a letter to Environmental Protection Agency Administrator Scott Pruitt in 2017, Harold Schaitberger, general president of the International Association of Firefighters, a Washington-based labor union, warned against delaying Obama administration safety regulations.

"Further delay would potentially endanger not only the public, but the lives of fire fighters responding to incidents at chemical facilities," Schaitberger wrote.

The regulations came in response to a high-profile fertilizer plant explosion in West, Texas, in 2013 that killed 12 firefighters when they entered the burning plant. But the EPA was concerned about lower-profile mishaps throughout the U.S., too.

Despite Schaitberger's pleas to keep the chemical safety rule in place, the EPA delayed the regulation to Feb. 19, 2019. An agency spokesman didn't respond to a request for comment from Bloomberg Environment on the EPA's views of risks to first responders.

"It seems that what we've been saying pretty much falls on deaf ears," Shannon Meissner, director of governmental affairs for the International Association of Firefighters, told Bloomberg Environment.

The purpose of the regulation seems like a no-brainer, Meissner said.

"You're not going to perform anywhere near as well on the day of the accident unless you practice," she said. "That's true for our members, but also, even more so, for the people at these facilities."

The International Association of Fire Chiefs, which represents leaders of fire agencies, doesn't have a position on the EPA's regulation, Jim Philipps, a spokesman for the Virginia-based group, told Bloomberg Environment.



Chemical Facilities Coordinate

During the Obama administration, the EPA tried to set new requirements for large chemical facilities to coordinate with local responders to avoid mishaps and miscommunication.

But with federal action paused, state programs in Washington and California are addressing the issue at oil refineries, but their actions don't extend to other industrial facilities.

Arkema disputes the allegations in the first responders' lawsuit, and Olin said they are already doing at least some of the actions called for in the federal regulation, as did local officials in some areas where major industrial accidents have occurred.

Olin said in a statement it has "a robust risk management program integrated into our daily operations." The company said it regularly coordinates with state and local agencies, including those in McIntosh, on preparedness drills.

Olin also provided respirators to the McIntosh Police Department and donated gas monitors capable of detecting chlorine to the local fire department, as part of a settlement agreement with the Alabama Department of Environmental Management.

Arkema worked with local responders "for years" on training exercises and shared information about the plant, Janet Smith, the company's director of communications and crisis preparedness, said in an email to Bloomberg Environment.

Responders can prepare by ensuring planning and communication are up to date, even if they work in a small community, Ted Graf, chief of the Atchison Fire Department in Kansas, told Bloomberg Environment. Graf was involved in a response to a toxic cloud of chlorine gas and other compounds that enveloped the city on Oct. 21, 2016.

Graf's comments were echoed by Richard Curtis, chief of the Anacortes Fire Department in Washington state. Anacortes is home to two oil refineries that saw major explosions in 1998 and 2010, killing a combined 13 workers.

These grim reminders have brought advancements such as a Reverse 911 notification system and a single frequency for radio communications, Curtis told Bloomberg Environment.

National Changes

More changes could be afoot if Washington regulators finalize regulatory changes for oil refineries that echo a stepped-up safety program California officials put in place last year.

Those changes go beyond what the Obama administration EPA considered. They would require companies to use the safest possible options to evaluate refinery processes on an ongoing basis to eliminate hazards and to involve workers in safety decisions, among other things.

Atchison responders have increased training with the county's Department of Emergency Management, which was a recommendation the U.S. Chemical Safety Board issued when it investigated the chemical release, Graf said.

The Washington city's refineries have in-house firefighters on-site, but if a major incident happens again, the six-person municipal force will have to close roads and provide medical assistance, Curtis said. Oil companies Andeavor and Royal Dutch Shell Plc pitch in, through regular meetings with city officials and paid training for its firefighters, Curtis said.

Firefighters in Atchison have been canvassing the region, talking to other departments about their tumultuous day.

"Don't say it can't ever happen here," Graf said. "Because things have happened here."

LOUISIANA ENVIRONMENT AND FLOOD CONTROL

See ozone levels at 6 greater New Orleans-area sites

Posted May 10, 2018 at 04:50 PM | Updated May 10, 2018 at 04:49 PM

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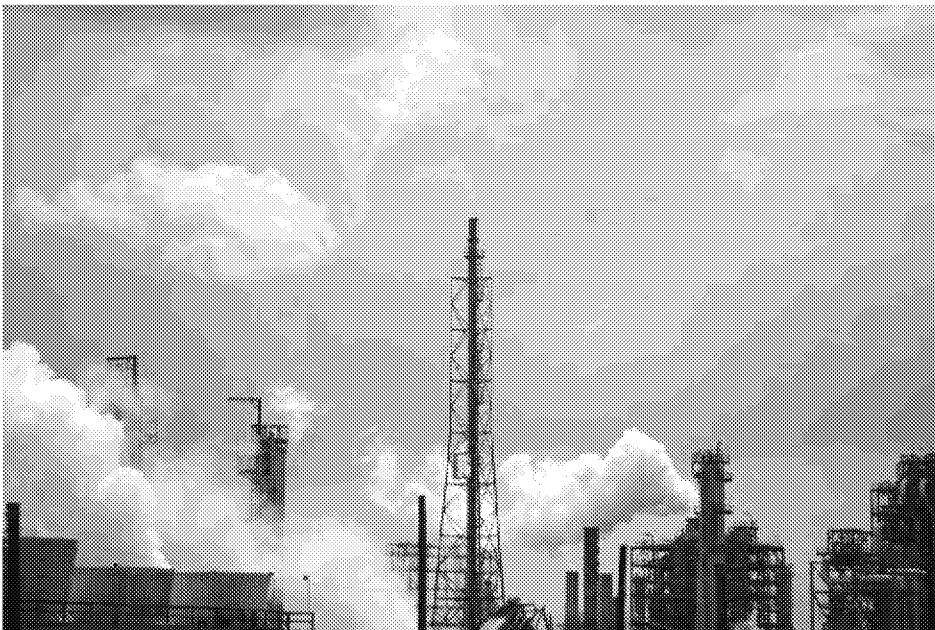


Photo by Kathleen Flynn, NOLA.com | The Times-Picayune archive

By Jennifer Larino, NOLA.com | The Times-Picayune

The New Orleans metro area is under an air quality alert Thursday (May 10) until midnight, marking the third consecutive day officials have warned of the possibility of unhealthy ozone levels. Sensitive groups like people with asthma and elderly adults are advised to stay inside and, in general, residents should limit or take more frequent breaks during outdoor work and recreation, such as evening runs or youth sports games.

Just how high are ozone levels in our areas? The Louisiana Department of Environmental Quality monitors air quality at six sites throughout the region, including heavily industrial areas. They are:



- Convent
- Garyville
- Kenner
- Madisonville
- Meraux
- Thibodaux

Here is a list of the six test sites as well as the hourly ozone readings recorded at each site from Tuesday to Thursday.

Note: If you're reading on a mobile phone, turn it sideways to landscape mode to get a full view of the graphs included below.



David McNew/Getty Images

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What is ozone?

Ozone is a colorless gas typically found in the upper reaches of the Earth's atmosphere. There it works to protect the planet from the sun's ultraviolet rays.

But ozone can be harmful when it appears in lower levels of the atmosphere and starts to affect the air we breathe, so-called "low-level ozone." Ozone in the air can make it harder to breathe and lead to coughing, increased asthma attacks and lung damage.

Low-level ozone forms when two types of pollutants -- volatile organic compounds, or VOCs, and nitrogen oxides, NOx -- react with sunlight. Ozone-causing pollutants come from a range of sources, including industry, power plants, vehicles and chemical products such as solvents and paints.

Hot weather, like the stretch we've been seeing the New Orleans area this week, can cause low-level ozone levels to rise.





David McNew/Getty Images

What do these numbers mean?

The following numbers represent the level of ozone in the air in parts per billion, or ppb. The below chart from AirNow has color-coded ozone threat levels, ranging from healthy to hazardous.

The air quality alert currently in effect for New Orleans warns the region is in the orange ozone level, meaning the possibility of an ozone level between 101 and 150 ppb being recorded somewhere in the New Orleans area at some time within the alert window.

Here are ozone ranges for each of the threat levels.

- Good: 0-50 ppb
- Moderate: 51-100 ppb
- Unhealthy for sensitive groups: 101-150 ppb
- Unhealthy: 151-200 ppb
- Very unhealthy: 201-300 ppb
- Hazardous: 301-500 ppb



Air Quality Index (0-500)	Who Needs to be Concerned?	What Should I Do?
Good (0-50)	It's a great day to be active outside.	
Moderate (51-100)	Some people who may be unusually sensitive to ozone.	Unusually sensitive people: Consider reducing prolonged or heavy outdoor exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it a little easier. Everyone else: It's a good day to be active outside.
Unhealthy for Sensitive Groups (101-150)	Sensitive groups include people with lung disease such as asthma, older adults, children and teenagers, and people who are active outdoors.	Sensitive groups: Reduce prolonged or heavy outdoor exertion. Take more breaks, do less intense activities. Watch for symptoms such as coughing or shortness of breath. Schedule outdoor activities in the morning when ozone is lower. People with asthma should follow their asthma action plans and keep quick-relief medicine handy.
Unhealthy (151 to 200)	Everyone	Sensitive groups: Avoid prolonged or heavy outdoor exertion. Schedule outdoor activities in the morning when ozone is lower. Consider moving activities indoors. People with asthma, keep quick-relief medicine handy. Everyone else: Reduce prolonged or heavy outdoor exertion. Take more breaks, do less intense activities. Schedule outdoor activities in the morning when ozone is lower.
Very Unhealthy (201-300)	Everyone	Sensitive groups: Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. People with asthma, keep quick-relief medicine handy. Everyone else: Avoid prolonged or heavy outdoor exertion. Schedule outdoor activities in the morning when ozone is lower. Consider moving activities indoors.
Hazardous (301-500)	Everyone	Everyone: Avoid all physical activity outdoors.

Courtesy AirNow

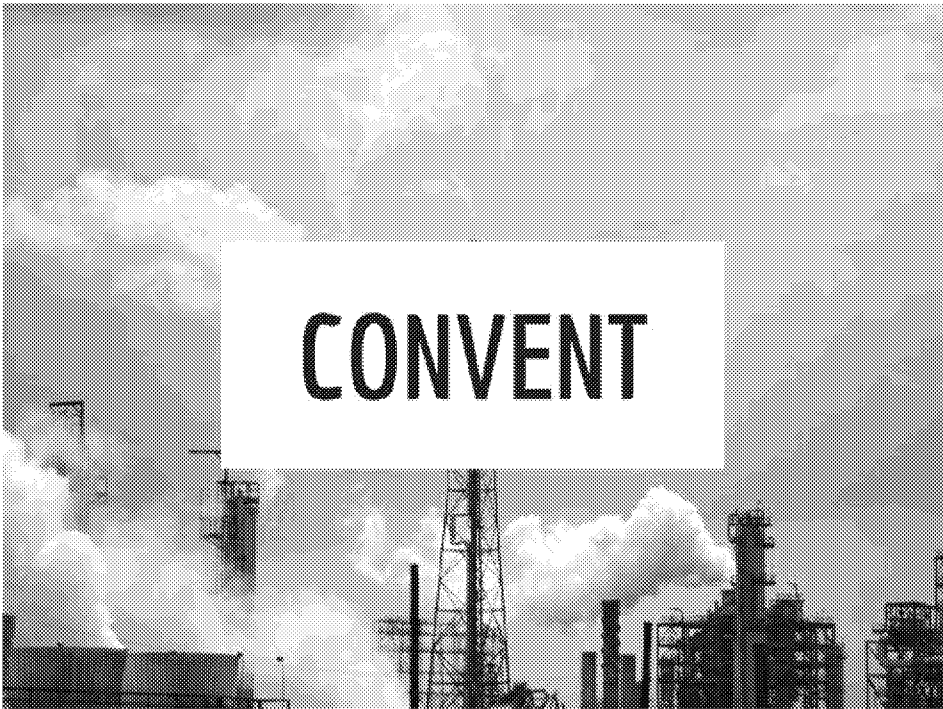


Photo by Kathleen Flynn, NOLA.com | The Times-Picayune archive

The following graph shows the hourly ozone readings measured in Convent from Tuesday (May 8) to Thursday at 11 a.m.

The highest ozone level was recorded Wednesday at 4 p.m. Here were the highest and lowest record ozone levels as well as the time they were recorded for Tuesday, Wednesday and Thursday.



Tuesday, May 8

- Highest: 60 at 7 p.m.
- Lowest: 0 from 12-1 a.m.; 3-5 a.m.; and 7-8 a.m.

Wednesday, May 9

- Highest: 70 at 4 p.m.
- Lowest: 3 from 7-8 a.m.

Thursday, May 8 (until 11 a.m.)

- Highest: 50 at 11 a.m.
- Lowest: 0 from 5-7 a.m.

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Photo by Ted Jackson, NOLA.com | The Times-Picayune

The following graph shows the hourly ozone readings measured in Garyville from Tuesday (May 8) to Thursday at 11 a.m.

The highest ozone level was recorded Wednesday at 5 p.m. Here were the highest and lowest record ozone levels as well as the time they were recorded for Tuesday, Wednesday and Thursday.

Tuesday, May 8

- Highest: 64 at 5 p.m.
- Lowest: 0 from 12-3 a.m.

Wednesday, May 9

- Highest: 80 at 5 p.m.
- Lowest: 0 at 6 a.m.

Thursday, May 10 (until 11 a.m.)

- Highest: 57 at 11 a.m.
- Lowest: 0 from 5-7 a.m.





Photo by David Grunfeld, NOLA.com | The Times-Picayune

The following graph shows the hourly ozone readings measured in Kenner from Tuesday (May 8) to Thursday at 11 a.m.

The highest ozone level was recorded Wednesday at 4 p.m. Here were the highest and lowest record ozone levels as well as the time they were recorded for Tuesday, Wednesday and Thursday.

Tuesday, May 8

- Highest: 65 at 5 p.m.
- Lowest: 20 at 12 a.m. and from 2-3 a.m.

Wednesday, May 9

- Highest: 74 at 4 p.m.
- Lowest: 15 at 8 a.m.

Thursday, May 10 (until 11 a.m.)

- Highest: 60 at 11 a.m.
- Lowest: 1 at 7 a.m.



spewing in NW OKC closes roads Thursday afternoon

Reports Published: May 10, 2018 5:29 PM CDT Updated: May 10, 2018 5:31 PM CDT



Oklahoma City fire department respond to 16900 block of N. Pennsylvania Ave about a possible hazmat situation in Oklahoma City Thursday [Photo by Sarah Phipps, The Oklahoman]

Oklahoma City fire crews responded Thursday afternoon to reports of a “yellow liquid” spewing from the ground near an oil well site in northwest Oklahoma City.

About 4:25 p.m., crews responded to the 16900 block of

N Pennsylvania Avenue where the liquid, later identified as by fire officials as raw crude oil, could be seen spewing up into the air.

Authorities closed off part of Pennsylvania Avenue near NW 164 until the leak was contained. Less than an hour later, officials opened the road.

ARCTIC

Sea ice is getting younger. Here's why that's a big deal

Chelsea Harvey, E&E News reporter

Published: Friday, May 11, 2018



Aerial image of Arctic sea ice. NASA Goddard Space Flight Center/Flickr

When it comes to sea ice, old age can be a good thing.

So it's troubling to researchers that older layers of Arctic sea ice — which have persisted for multiple years in a row — are increasingly melting away.

Since 1984, the percentage of multiyear ice cover has declined from 61 percent to just 34 percent, according to a new [report](#) from the National Snow & Ice Data Center (NSIDC). And the oldest sea ice — ice that's been frozen for at least five years — now accounts for just 2 percent of the ice cover. That means more and more of the total ice cover consists of "first-year" ice, or ice that's only been frozen for one season.

These trends are not to be taken lightly, experts warn. When it comes to sea ice, age is far more than just a number — it's an indicator of the ice thickness, its likelihood of melting away in warm weather, the amount of light it lets through to the ocean below, and other factors that affect the Arctic ecosystem and its resilience to climate change.

"The older ice tends to be the thick ice — and the thick ice is the stuff that can take a punch," said Mark Serreze, director of the NSIDC.

The new report also shows that Arctic sea ice hit a near-record low for the season last month. The only other year on record that saw less sea ice in April was 2016.

Each year, Arctic sea ice experiences a kind of natural flux as the seasons progress. In the winter, more ocean water freezes at the surface, and the total ice extent increases. During the warmer months, some of that ice melts away again, while some of it manages to persist through the summer and make it to the next year.

Sea ice freezes from the bottom up, so every additional winter that it persists, it gets a little bit thicker. While first-year ice is often just a few feet thick, multiyear ice can grow to be nearly 15 feet deep. Thicker ice is generally more likely to survive the summer months, while younger, thinner ice is at a greater risk of melting away entirely during the warm season.

But as temperatures in the rapidly warming Arctic continue to climb, year after year, the warm season is straining even the oldest, thickest layers of ice. And as multiyear ice disappears, and more of the total ice cover consists of thinner, more vulnerable ice, some experts worry that the Arctic is inching closer to a future in which it all melts away entirely during the summer months.

Every additional loss of multiyear sea ice "reduces the likelihood of any kind of recovery of sea ice extent in the future (because the ice that replaces the following winter ... will be younger and thinner and therefore more prone to melt)," sea ice expert Andrew Mahoney of the University of Alaska, Fairbanks, said in an email to E&E News.

In fact, several recent studies suggest that year-round ice cover could be a thing of the past sooner rather than later. Last month, two separate papers published in *Nature Climate Change* found that failing to meet the Paris climate agreement's most stringent climate targets could result in ice-free summers by the end of the century ([Climatewire](#), April 3).

"At that point, when you lose all the multiyear ice, sea ice will be but a seasonal feature of the Arctic Ocean," Serreze said.

Ice-free summers, in and of themselves, are cause for concern. For one thing, year-round ice cover is important to animals like polar bears, which use it as their hunting grounds. Additionally, the less sea ice covers the surface of the ocean, the more sunlight is absorbed by the water, which scientists warn could accelerate the Arctic's warming. In fact, experts suggest that long-term sea ice declines are already helping to amplify climate change in the Arctic.

Letting more light in

Thinner ice layers, in addition to lower overall ice extent, may also allow more sunlight to penetrate through to the water beneath them. And as a result, the Arctic ecosystem could change in some complex ways scientists are still beginning to understand.

Some experts suggest that algae and other forms of phytoplankton in the water may get a boost from the extra sunlight. And this means certain species that feed on the algae may actually benefit.

On the other hand, if algae starts to grow too early in the season, there may be negative consequences, as well. Typically, algae blooms occur when the summer sunlight is already strong. As a result, the algae grows rapidly, and a lot of it accumulates in the water at once. Some of it gets consumed by fish and other animals swimming around in the water column, but there's generally enough left over for some of it to fall down to the seafloor and nourish bottom feeders, such as clams and other shellfish.

But if the algae starts to grow too early in the season, while the spring sunlight is still weak, it may grow more slowly than before, Mahoney pointed out. That means more of it may be snapped up by swimming animals before it can fall to the bottom of the ocean — bad news for bottom feeders and for larger animals that feed on them in turn.

"So there's a lot of things going on," Serreze noted — some of them with clearly negative consequences and some whose outcomes may be more complex. While scientists are still working to figure out exactly how the Arctic may change in the coming years, it's clear that it's already different than it used to be. And the steady loss of its oldest sea ice is one of the contributing factors.

"The moral of the story is that if you look at the Arctic — at least the Arctic of old — it would be an Arctic Ocean filled with ice of all kinds of different age classes," Serreze said. But now, he added, it's increasingly being replaced by younger ice.

"This is part and parcel of getting warmer," he said.

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